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FOREWORD

The role of the Army in support of the national military strategy has not changed. It is to provide land forces capable of operating across the entire spectrum of military operations. However, as the focus shifts from a forward deployed to a CONUS-based Force Projection Army, the requirement to generate and deploy these forces adds new dimensions to the conduct of combat health support operations.

The dynamics of our changing world, in terms of economics, the national military strategy, and possible threats, create unique challenges for battlefield health care delivery. These challenges must address the requirements for strategic force projection, rapid operational deployment, and lightning quick military tactical operations, as well as the requirements for operations other than war. The design criteria for the health support system of the future should mirror the evolutionary characteristics of the Army of the future. This system must provide flexible, versatile, modular medical units to support the rapid deployment of a force projection Army, yet capable of supporting forward deployed forces. These units will be capable of operating in a split based mode to support the full range of military roles across the operational continuum. The medical force of the future will assure a medical presence with the soldier, while at the same time providing state-of-the-art combat health support.

This pamphlet provides the conceptual foundations of combat health support as we move into the twenty first century. It is the Army Medical Department's evolving vision of future medical operations and organizational designs. It includes a number of new programs, initiatives, and modernization efforts that were generated as a result of the Medical Reengineering Initiative. It encompasses the required capabilities for all medical functional areas. It is influenced by the strategic, operational, and tactical levels of war, and supports all mission requirements across the operational continuum.

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Military Operations

OPERATIONAL CONCEPT FOR COMBAT HEALTH SUPPORT

Summary. This pamphlet provides a concept that serves as the basis for developing doctrine, training, leader development, organizations, and materiel changes focused on requirements and solutions for combat health support (CHS) operations. It provides the framework to describe the capabilities required for CHS to a force projection Army. Under this concept, CHS capabilities are projected to meet mission requirements over the range of the operational continuum. It links the strategic to the operational level of health services. Combat health support at the tactical level assists in clearing the battlefield of casualties and providing an early personnel replacement pool.

Applicability. This pamphlet applies to all Army Medical Department (AMEDD) and U.S. Army Training and Doctrine Command (TRADOC) activities that develop doctrine, training, leader development, organization, materiel, and soldier requirements.

Suggested improvements. The proponent of this pamphlet is the Deputy Chief of Staff for Combat Developments. Send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Commander, TRADOC, ATTN: ATCD-BP, Fort Monroe, Virginia 23651-5000. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal).

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Chapter 1
Introduction

1-1. Purpose. This operational concept is a forecast and an outline of the combat health support (CHS) required to support a Force Projection Army into the 21st century. It outlines the capabilities the combat health support force must develop and field in order to support the Army. This concept describes a broad summary of changes in the CHS system throughout the functional areas of CHS. It also serves as the foundation for change in the domains of doctrine, training, leader development, organization, materiel, and soldier support.

1-2. References. Required and related publications are listed in appendix A.

1-3. Explanation of abbreviations and terms. Abbreviations and terms used in this pamphlet are explained in the glossary.

Chapter 2
Overview

2-1. Need for the concept. This CHS concept identifies Army medical department (AMEDD) required capabilities to support operational warfighting concepts to include force projection, peace operations, humanitarian assistance, and operations in aid of civil authorities. The CHS structure must be strategically and tactically agile to respond to the broad range of worldwide requirements. This system must be ready and versatile and capable of rapid deployment to help preserve U.S. global interests and responsibilities. As battlefield technology increases, the importance of an efficient and highly responsive medical support system grows proportionately.

2-2. Threat.

a. The post Cold War international environment presents the U.S. with security challenges that are unprecedented in ambiguity, diversity, risk, and opportunity. For many decades, nearly all U.S. intelligence analysis was directed toward one country. The Soviets strategic doctrine and tactics for conducting offensive and defensive operations were well understood and confident estimates of Soviet weapons capabilities existed. Additionally, during the Cold War, U.S. National security strategy carefully rationed the use of military force to only those conflicts which promoted democracy over communism. The world was a dangerous place, but the superpowers were held in check by the knowledge that each had the capability to destroy the planet.

b. The end of the Cold War signaled the emergence of a "New World Order". Unfortunately, reality has proven that this "New World Order" is neither new nor orderly. The old forces of adventurism, nationalism, and separatism have reappeared, often with violent and unpredictable consequences. Coupled with this is a new National Security Strategy, still in its infancy, which allows for U.S. military involvement in the complicated scenarios such as peace making operations, nation building, and humanitarian assistance.

c. With the diminished threat of a large scale military confrontation, military force size and capabilities are being affected in countries throughout the world. Many of the major military powers are moving towards smaller, better equipped, and better trained forces. Developed nations have also improved military capabilities through greater access to military system technologies and the increased availability of a wide range of advanced military equipment on the international market. How well these nations are able to integrate advanced weapons systems and technology into their armed forces is uncertain. However, the global arms market is creating an environment where even underdeveloped countries may acquire the advanced weapons system(s) for a "high technology niche" that may increase their leverage over another regional power. While high tech weapons will be available either through direct purchasing or through third party countries, many hostile forces, especially paramilitary or insurgent forces, will maintain a low tech inventory. This low tech environment does not translate into a low threat environment for U.S. forces. Small hostile forces often demonstrate a creativity and flexibility for use of low technology weapons that is unexpected, thereby compounding the problems associated with assessing their capabilities. The implication for the U.S. Army is clear. U.S. forces must be continually prepared to face a variety of threat forces, many with credible military capabilities.

d. The AMEDD views threat from two perspectives. Both viewpoints are rooted in a potential adversary's capability to conduct combat operations. The first of these viewpoints is similar to the way threat is viewed in the Army. That is a potential adversary's capability to disrupt CHS operations on the battlefield. The second is the AMEDD's responsibility to anticipate and prevent the degradation of soldiers' health and performance by environmental hazards and military capabilities. This second perspective is called "medical threat." Soldiers are the targets of these threats. Weapons or environmental conditions that will generate casualties beyond the capability of the CHS system are

considered to be significant medical threats. Weapons or environmental conditions that produce qualitatively different wound or disease processes are also significant medical threats. Elements of medical threat include the following:

(1) Naturally occurring disease.

(2) Environmental extremes and battlefield hazards.

(3) Battle injuries - small arms and fragmentation ordnance/munitions.

(4) Biological warfare.

(5) Chemical warfare.

(6) Directed energy sources.

(7) Blast effect munitions.

(8) Combat stress and continuous operations.

(9) Flame and incendiary weapons.

(10) Nuclear weapons.

2-3. Assumptions.

a. The reserve component. Both the U.S. Army Reserve and the Army National Guard will be relied upon to provide a variety of CHS functions in support of combat operations and military operations other than war. Given a shrinking force structure and declining defense expenditures in general, this reliance on reserve component capabilities will increase in the future. The reserve component will continue to maintain a significant portion of the Army's CHS structure.

b. Civilians in support of military operations. Department of Defense (DOD) civilian personnel, civilian personnel from non DOD agencies and organizations, civilian contractors, and elements of host nation support organizations will provide an increasing number of capabilities in support of military operations. Use of these non-uniformed and non-traditional support personnel will require the administration of CHS that differs from the historical practices of the past.

c. Joint, multinational, and interagency operations.

(1) Missions that require the projection of Army forces are intrinsically joint operations. Joint force interoperability is crucial to the success of CHS operations. Further, joint CHS forces must be able to use and integrate national intelligence systems linked into joint command, control, and communication systems. During peacetime, the Army must train, structure, and equip its units to prepare for joint CHS operations in support of the projection of U.S. forces.

(2) Multinational operations will require different integration processes than those used during the Cold War. Multinational efforts to streamline the focus of combat power are replacing national doctrines. The Army can expect combatant commanders to exercise their authority and ask national commanders to take on support missions to the combined or coalition force. Given the demands of these types of operations, interoperability between forces of different nations will be required. While standardization is the ideal, it may not be fully achievable. Therefore, interoperability efforts must continue where feasible and practical.

(3) Army forces may operate in support of non-DOD agencies in achieving national objectives. These interagency operations may require support from the Army's CHS system.

d. Technology.

(1) Technology must thread itself through the entire CHS system, enhancing already existing capabilities; providing replacements for outdated technology; and providing new capabilities never before available. In order to achieve the goals of Army modernization, we must look at the prevention of disease through molecular biology technology, advanced physiologic and psychological soldier monitoring systems, modern ground and air evacuation platforms with enhanced enroute medical support capabilities, computer and artificial intelligence assisted treatment protocols, communication systems and devices that permit units to be electronically collocated and provide for a worldwide telemedicine presence, and projection of real time medical specialties across the continuum of care.

(2) Medical communications for combat casualty care (MC4) will employ advanced technology systems and procedures. These systems, coupled with conventional medical applications, will project or expand the sphere of influence of professional medical services or expertise in support of forces deployed into a theater of operations. This technology will speed up the acquisition of patients, provide the combat medic with access to physician guidance, and link highly specialized physicians, located in the theater rear or out of theater, with physicians operating at austere forward medical facilities.

e. Medical readiness. Medical readiness encompasses the ability to maintain and project the continuum of health care resources required to provide for the health of the force. It includes the ability to mobilize, deploy,

and sustain field medical services and support for any operation requiring medical services. It must also be able to operate in conjunction with beneficiary health care.

2-4. Limitations.

a. Successful long term implementation of this concept is dependent upon communications and automation impacting MC4, casualty and patient accountability, medical evacuation, split based operations, and management of Class VIII materiel, repair parts, and blood products for all medical elements.

b. CHS will be influenced by resources available in the area of operations including prepositioned materiel. The level of infrastructure development will affect CHS operations and force closure. Host nation, international law, regulations, directives, or treaties may prescribe or constrain the nature or degree of CHS operations.

c. Maximum use of strategic air and sea assets will be realized through the deployment of modular CHS elements. These assets will also be required for out of theater evacuation of casualties. CHS may be constrained due to limited or nonexistent transportation assets.

Chapter 3
Concept

3-1. Overview. The purpose of the CHS system is to conserve the fighting strength. This includes both the deployed force and the sustaining base. Consistent with military and logistical operations, CHS operates in a continuum across strategic, operational, and tactical levels. The goals of CHS are to: reduce the incidence of disease and nonbattle injury through sound preventive medicine programs; provide medical care and treatment for acute illnesses, injuries, or wounds; expedite evacuees out of theater; and promptly return to duty those soldiers who have recovered. The major principles of this vision are:

a. Prevent casualties from disease and non battle injury (DNBI) through medical surveillance, and disease and injury control.

b. Far forward medical treatment, including advanced trauma management and far forward surgery.

c. Standardized medical units using a modular designed medical support system.

d. Standardized air and ground medical evacuation units, using air evacuation as the primary means of medical evacuation on the battlefield.

e. Maximum use of emerging technology to improve battlefield survivability, and decrease mobility and resource requirements.

f. Flexible, responsive, and deployable hospitals designed and structured to support a Force Projection Army and its varied missions.

g. Enhanced ancillary and functional support systems using state-of-the-art technology.

h. Command and control (C^2) units capable of providing the requisite C^2 package to allow medical units to perform split based operations.

3-2. Concept description.

a. Power projection will continue to be a central concept in the national military strategy of the United States. The CHS system must, therefore, be capable of projecting support worldwide to help preserve U.S. global interests. The forces which the CHS system supports will be rapidly deployable, lethal, versatile, and expandable. The Force XX1 battlefield will be characterized by dispersion, lightning quick military operations, increased mobility requirements, rapid task organization, and lengthened lines of communication. The CHS must be strategically and tactically agile in order to be responsive to the broad range of worldwide requirements.

b. The CHS system is a continuum from the forward edge of the battle area through the Continental United States (CONUS) sustainment base. It is a system that provides medical management throughout all levels of care. The challenge is to simultaneously provide medical support to deploying forces, provide health care services to the CONUS base, and establish a CHS system within the theater. Additionally, there will be a requirement to provide medical support to redeployment and demobilization operations at the conclusion of military operations. Furthermore, CHS requirements will surface in support of support and sustainment operations. The basic tenets of CHS for a force projection Army involve strict adherence to Army medical battle rules. These battlefield rules provide the basis for the development of medical organizations and force structure. Table 3-1 lists these rules in order of precedence.

Table 3-1. Army Medical Battlefield Rules

Be There (Maintain a Medical Presence with the Soldier)
Maintain the Health of the Command
Save Lives
Clear the Battlefield of Casualties
Provide State of the Art Medical Care
Ensure Early Return to Duty of the Soldier

c. The CHS system will be structured in such a way that it can be tailored to perform multiple diverse missions. It will be designed to support extremes such as forced or unforced early entry operations, through humanitarian/nation assistance missions, to the support of multiple corps organizations requiring long-term sustainment. This will be accomplished by designing medical units and organizations that are agile, mobile, deployable, survivable, tailorable, and capable of providing various battlefield medical capabilities simultaneously in support of military operations.

d. While the emphasis of the CHS system has changed, it will continue to anticipate the needs and requirements of the combined arms forces and provide responsive medical support to the right place at the right time. This will be accomplished by focusing resources and medical skills far forward in the combat zone. Far forward stabilization and emergency medical treatment supports rapid clearing of the battlefield without sacrifice of life or function. The CHS system will now be a source of limited replacement manpower to the battle commander during the early stages of conflict. This pool of soldiers will be formed from the lightly wounded and less seriously sick or injured soldiers that can be treated and returned to duty (RTD) almost immediately.

e. Divisional and echelons above division (EAD) CHS organizations will be modular in design and employment, providing flexibility and responsiveness to meet the challenges of the evolving battlefield. Hospitals will possess the capability for early deployability into a theater with organic assets, such as emergency surgical and medical resources, to augment and reinforce divisional medical elements. The modular design of CHS organizations provides the flexibility that is needed to rapidly reinforce or reconstitute medical elements at any level of the system.

f. Rapid clearing of the battlefield and assimilation of wounded, sick, or injured soldiers into the CHS system is critical in reducing morbidity and mortality among U.S. soldiers. Speedy recovery of the wounded and sick from areas of operations, and the efficient execution of medical evacuation missions, are essential ingredients in successful combat health support operations. The CHS command and control infrastructure is designed to deliver coordinated joint medical regulating within the theater.

g. Medical logistics organizations will maximize early forward support flexibility. Deployed elements will be capable of supporting initial increments of a deploying force. Health service logistics will be anticipatory and projected when and where needed; it will be tailored to support missions continuously through each stage of the battle, and across the operational continuum. Host nation support agreements will be used where possible as extensions and multipliers of U.S. medical resources.

3-3. Required capabilities.

a. Medical treatment.

(1) Medical treatment consists of those measures necessary to recover, resuscitate, stabilize, and prepare the casualty for evacuation to the next level of care. Echelon (level) I medical care will be performed by medical elements organic to combat and selected combat support units. Echelon (level) II medical care will be provided by organizations designed to provide reinforcing CHS to Echelon I medical elements, and perform area medical support missions. The use of self

aid/buddy aid and the combat lifesaver will be critical adjuncts to the CHS system by providing emergency first aid on the battlefield until trained medical personnel can arrive on the scene.

(2) Medical treatment will be provided through the use of modular medical elements and units designed to perform specific battlefield medical functions. The composition of each module type will be identical regardless of where they are employed. This will ease the reconstitution burden on the CHS system. Echelon I CHS elements will provide advanced trauma management, limited preventive medicine services, routine medical sick call, and limited medical ground evacuation. Echelon II elements will duplicate these services in addition to providing limited dental, x-ray, and medical laboratory services, and extensive ground medical evacuation services. Mobile medical treatment modules will be used forward to provide area support to all elements attached to maneuver brigades, and to reinforce the treatment capabilities of maneuver battalions. Under certain conditions, treatment and ambulance modules may be collocated at ambulance exchange/transfer points to ensure continuity of care during the evacuation process. Other area support medical functions will include limited optometry, mental health and combat stress control, preventive medicine, and limited patient holding capabilities.

(3) Casualties whose wounds or injuries will not allow for immediate evacuation out of the division will receive immediate surgical care in order to stabilize them for evacuation. The requirement to project resuscitative surgery far forward will increase as a function of the extended battlefield. Forward surgical teams (FST) will meet this need in support of brigade-sized units. Surgical stabilization of otherwise non-transportable casualties is the focus of these forward surgical teams. The teams will have the capability to select (triage) surgical candidates, provide pre-operative treatment, surgical stabilization, and postoperative recovery. Generally, FST will be corps assets, and employed with, or attached to, an Echelon II medical unit in support of combat operations. The teams will be attached to corps hospitals when not employed in the division. The FST will be organic to the airborne and air assault division and the separate armored cavalry regiment.

(4) Additional CHS, above that provided by organic organizations, required by the division will be provided by corps level medical organizations. These organizations will also provide CHS to corps organizations on an area support basis. These units will be responsible for providing CHS to corps elements within the combat zone as well as those positioned forward in the battle zone. Medical elements may be task organized to move forward with supported units, and to provide medical evacuation from those units to Echelon II facilities or theater hospitals. These corps medical organizations will incorporate the medical modular design found in Echelon I and II CHS units. This allows for reinforcing or reconstituting forward deployed medical assets. Corps medical C^2 elements will be designed using modularity principles in order to project the necessary medical support to the most appropriate location on the battlefield. The location of these units will be contingent upon troop population, medical support requirements, and their ability to reinforce or reconstitute other corps and divisional medical assets.

b. Medical evacuation and regulation. Casualty evacuation from the battlefield is a critical element of the overall CHS system. It must be immediately available and capable of moving seriously wounded, injured, or ill personnel from forward locations on the battlefield. Both air and ground evacuation must be totally integrated into the CHS mission in order to treat and evacuate casualties. Air evacuation will be the primary and preferred mode of evacuation. Regardless of the mode of evacuation, all evacuation vehicles will be capable of providing enhanced en route medical care and monitoring capabilities. As a part of this process, patients must be regulated to the most appropriate level of care. Patient regulating will be accomplished through coordination with corps medical C2 organizations and the forward areas of the battlefield. Together, air and ground evacuation will ensure continuity of care and the continuous flow of casualties through the CHS system. Coordinated, integrated enhanced evacuation will minimize the number and relocation requirements of theater hospitals.

c. Hospitalization.

(1) Theater hospitals will provide definitive care and CHS to all patients who will either be returned to duty or stabilized for evacuation out of the corps or theater. Hospitals will be redesigned around elements that can be rapidly and easily projected into a theater to support all missions across the operational continuum. Hospitals will be streamlined in order to decrease site limitations and sustainment requirements, while improving their strategic transportability. These hospitals will be designed to be employed forward in the theater, as well as in the theater rear. They will be comprised of identifiable elements, task-organized to

support particular missions, in accordance with (IAW) the hospital's location on the battlefield. Theater hospitals may be required to locate in offshore facilities or in third country support bases. These may be relatively fixed facilities. Dependent upon the force mission, hospitals may be sited near theater air heads or seaports to prepare patients for evacuation out of the area of operations. Additionally, medical equipment sets will be redesigned to support a variety of hospitalization requirements. These sets will include medical, surgical, humanitarian, obstetrical and gynecological, pediatric, and geriatric medical equipment sets.

(2) Hospitals in the CONUS sustaining base will provide the ultimate treatment capability for patients generated within the theater. Army hospitals and medical centers, along with other available medical facilities, will be specifically designated to handle the most definitive medical or surgical requirements. Returning patients will be regulated to the most appropriate CONUS hospital/medical center to accommodate their specific medical conditions. Additional CONUS based medical evacuation units, authorized under Tables of Distribution and Allowances will support CONUS mobilization sites. These units will also support the Air Force evacuation system within CONUS. CONUS hospitalization will be designed to provide the soldier with maximum return of function through a combination of medical, surgical, rehabilitative and convalescent care.

d. Combat health logistics and blood management.

(1) Major changes in the Army's war reserve policy will affect planning and sustaining operations. The most significant of these changes will be the central management of army war reserves and operational project stocks. This will provide the Army the flexibility to posture reserve stocks based on the geopolitical climate. One key element to this program is prepositioning reserve stocks afloat. The use of prepositioned ships, along with reducing numbers of army reserve storage locations, will increase the Army's ability to respond to all situations. As a means of early support, modular medical organizational equipment may be prepositioned afloat. Class VIII unit and sustaining equipment may also be afloat, including the resources for producing oxygen and storing blood and blood products.

(2) CHS logistics must be anticipatory and projected when and where needed. It must be tailored to continuously support missions through all stages of the battle, and across the operational continuum. The Class VIII system must reduce its reliance on strategic air and sea lift, utilize throughput to the maximum extent possible, eliminate double handling, and recognize and plan for the distribution mission. Theater Class VIII management will be accomplished through a unit distribution system that will push preconfigured supplies and services as far forward as needed. Blood and resuscitative fluids will be dispersed throughout the medical support system using predetermined distribution guidelines. A medical logistics management center will link the wholesale system (CONUS) with the theater. The AMEDD Combat Health Logistics System will serve as the theater's Single Integrated Medical Logistics Manager (SIMLM).

(3) The Combat Health Logistics System will employ standardized state of the art information management and communications systems. These systems will facilitate total asset and in transit visibility, automated transmission of optical fabrication requests, management of blood and blood products, management of medical equipment readiness, and management of captured enemy medical materiel and equipment. These systems will interface with systems from other services in order to accomplish the SIMLM mission.

e. Preventive medicine.

(1) Those measures that prevent or reduce the incidence of disease and non-battle injury (DNBI) are the most significant medical contributions to the warfight. Soldiers who do not become casualties remain part of the fighting force, they do not require treatment, evacuation, or hospitalization. Prevention of DNBI frees medical assets to support soldiers wounded by battle injury. DNBI remains the largest contributor to casualty production on the battlefield. As demonstrated in recent military operations, the doctrinal deployment of preventive medicine assets results in remarkable reductions in DNBI. Preventive medicine assets can be tailored to enter the area of operations at each level of conflict, an absolute requirement for establishment of an effective DNBI prevention program.

(2) Preventive medicine support focuses on those measures which provide the greatest return in prevention of DNBI. Food and water-borne disease, environmental injury, arthropod-borne disease, and non-battle injury are the most significant components of the medical threat. Traditional preventive medicine support provides the command with tools to ensure the safety of food services, water production techniques, and control methods for disease vectors. Preventive medicine physicians recommend vaccines and drug prophylaxis regimens and provide epidemiological expertise for prevention of infectious disease. Preventive medicine units educate soldiers in prevention of disease and environmental injury, including formal training programs for Field Sanitation Teams. To prevent chronic disease or injury, preventive medicine assets monitor the occupational and environmental hazards common to soldiers. The Army recognizes the serious social and political impact of chronic disease and injury on sustainment of the Force.

Prevention of long-range illness allows resources to remain focused on the warfight, avoiding the drain of costly medical support and financial liability.

(3) Preventive medicine resources will become a more direct contributor to the warfight. The evolutionary development of a comprehensive DNBI surveillance system will provide battlefield commanders with a health profile of tactical significance. Commanders will (in "real" time) visualize the health status of the entire force including the impact or potential impact of biological warfare threat agents. Using advanced technology, the disease surveillance system will coordinate health data from CONUS health facilities to the most forward medical treatment facilities, in a joint service environment. The ability of warfighters to evaluate their true fighting capabilities will be significantly enhanced.

f. Veterinary services.

(1) Veterinary services contribute to conserving the health of the command through two broad based functional areas — food inspection services and animal medical care. As the DOD Executive Agent the Army will provide veterinary medicine support to U.S. Air Force, Navy, Marines, and Army forces, as well as to other federal agencies such as Department of Agriculture, Department of Commerce, Drug Enforcement Agency, Secret Service, Department of State, and to our allies.

(2) Veterinary service medical modules will provide food inspection services to ensure wholesomeness, quality, and hygiene of rations. Veterinary medicine modules will provide animal medical care services to the military working dog. Additional services will include the prevention and control of zoonotic diseases.

(3) Veterinary service units will be designed with the flexibility to deploy numerous teams or personnel to accomplish diverse and decentralized support operations, or consolidate to meet requirements of a larger support operation. They will have the capability to task organize and deploy modules for short duration in support of military civil operations. These actions relate to the public health and preventive medicine aspects of the local human and animal populations, and to restoring agricultural and food animal health and food chains for occupying forces and civilian human and animal populations. Additional assistance includes establishing sanitary food production and processing procedures that will eventually permit the sale to U.S. Armed Forces. This may, in turn, be a key factor in the survival of the country as an independent nation. Veterinary officers may be used to augment CHS assets during mass casualty situations.

g. Dental services.

(1) Dental service support will provide dental care to all personnel in the theater. This support maximizes the quick return to duty of dental casualties, provides resuscitative, surgical capability for maxillofacial injuries, maintains the dental fitness of theater troops, and reinforces medical treatment facility personnel during mass casualty situations. There are two categories of dental care in theater: emergency and preventive care and maintaining care. There are also three types of dental care in theater: unit, hospital, and area dental care.

(2) Unit level dental care will be provided by a dental module organic to divisional and nondivisional medical companies, and all Special Forces Groups. This module consists of dental personnel, lightweight dental equipment, and is capable of 100% mobility. The module will provide emergency dental treatment to soldiers during tactical operations, employing the principle of "tail gate" support. As the tactical situation permits, and during build up and reconstitution, emergency and preventive dental care will be provided. The senior dental officer assigned within the division will serve as the division dental surgeon. The division dental surgeon will provide technical guidance to other divisional dental officers, and advise the division staff and commander on dental related matters.

(3) Hospital level dental support will be found in theater hospitals. This level of support will minimize loss of life and disability resulting from oral and maxillofacial injuries and wounds. The hospital dental staff will provide emergency and preventive and maintaining dental support to all injured or wounded soldiers, as well as the hospital staff. One member of the staff will be an oral and maxillofacial surgeon assigned to the surgical service of the hospital. The surgeon will manage oral and maxillofacial surgical procedures, postoperative care, and other medical procedures as necessary.

(4) Area dental support, consisting of the majority of theater dental assets, will be provided by dental service companies. These units will provide emergency and preventive dental services on an area support basis. Dental companies will be comprised of modular dental teams. Some of the teams will have the capability to operate separate dental treatment facilities, or to consolidate forces and operate one large facility, depending on the operational and tactical environment. Other teams will be employed to provide far forward emergency and preventive dental care, and to

reconstitute and augment unit level dental resources. Area dental units will also be employed in support of force provider modules.

h. Combat stress control.

(1) The mission of combat stress control is to enhance unit and soldier effectiveness through increased stress tolerance and positive coping behaviors. Primary prevention requires the identification and control of stressors and stress before they disrupt the mission or soldier health. Secondary prevention involves the rapid reversal of dysfunctional stress reactions (battle fatigue). Intervention must be accomplished according to the principles of proximity, immediacy, expectancy, and simplicity. Delay and over evacuation cause greater morbidity and long-term disability. Misconduct stress behaviors must be prevented by stress control measures because once criminal misconduct has occurred, it must be subject to disciplinary action.

(2) Control of stress at all echelons remains, ultimately, the commander's responsibility. At each echelon, unit leaders, medical personnel, ministry teams, staffs, and troops must be educated, monitored, and mentored in stress control principles and techniques. Combat stress control/mental health personnel must have a detailed understanding of supported units and their missions.

(3) Combat stress control/mental health personnel are organic to some Level II medical units. These personnel provide staff input, consultation, reconstitution support to attrited units, neuropsychiatric triage, initial stabilization, and restoration treatment. They are reinforced where needed by modular, combat stress control teams. These mobile teams provide the same services throughout the theater on an area-support or direct-support basis. The modular teams can be task-organized to provide larger reconstitution support, restoration and reconditioning programs. The combat stress control personnel and units are also active in and pre-deployment and post-homecoming activities. Mental health consultation and education may be provided to host nations coalition partners, and refugees during peace operations, humanitarian assistance, and operations in aid of civil authorities.

i. Command, control, communications, computers, and intelligence (C4I). Medical C4I will be a dedicated seamless system for the command and control of our unique CHS system. Casualties are not commodities, but American soldiers. As the CHS system is dedicated to their treatment, evacuation, and hospitalization, the medical C4I system, from the foxhole into the sustainment base, is answerable to no higher authority than the Army combatant commander. Using the principle of "First in — last out", CHS headquarters elements will arrive with lead elements of deploying force and orchestrate the arrival of follow on medical units into the theater. Medical headquarters elements must contain a small staff, flexible enough to reduce redundancy, yet robust enough to plan for and execute medical missions. This requires a communications and automation system that maintains continuous operations, even on the move. Automation, communication, and C^2 procedures must interface among other Army systems, among all levels of command, and among other services, nations, and allies. There will be a requirement for C4I systems that can aid in patient accountability, track the movement of patients/casualties across the battlefield, assist with the regulation of patients into/out of theater hospitals, and manage the complexities of the theater Class VIII system.

j. Laboratory services. Medical laboratory functions in CHS operations assess disease processes and monitor the efficacy of medical treatment. As is the case in many CHS functions, the sophistication of laboratory services will increase at each successive level of care. Medical laboratory assets in divisional medical treatment facilities will be austere, in keeping with the mobility requirements of the division. Laboratory tests will be limited to simple manual procedures. Hospital laboratories will be capable of performing both manual and semi-automatic laboratory procedures, with limited transfusion services available. Theater level medical laboratory resources will consist of an array of professional medical laboratory personnel using advanced and highly sophisticated laboratory equipment and procedures. Theater laboratory capabilities include consultative, investigative, and definitive laboratory services. The goal of the theater laboratory will focus on the total health environment of the theater, rather than emphasizing individual patient care. A majority of services will be oriented to the detection of chemical and biological agents, as well as indigenous diseases.

Chapter 4
Implications

4-1. Doctrine.

a. Current medical doctrine states that the objective of the existing health service support system is to reduce disease and nonbattle injury, provide care and treatment for acute illness, injury, or wounding, and promptly return to duty those soldiers who have recovered. This major premise lends itself well to supporting a force projection Army. The doctrinal philosophy of far forward care, modular medical organizations, flexible and responsive medical

organizations, enhanced ancillary care, and continuous intensive medical management throughout all levels of care and evacuation is sound. Medical organizations will be designed and structured in order to align the CHS system with the tenets of future Army operations. These doctrinal tenets are applicable across the entire operational continuum of conflict. Future medical doctrine must continue to underscore the joint and multinational nature of future operations. Synchronization of all available medical assets, while avoiding duplication with other services or allies, needs to be established in doctrine.

b. All eight-series doctrinal manuals will be affected in some way by future health service support. The extent of impact will vary from manual to manual. Most doctrinal manuals will need, at a minimum, a revision, and, at the most, a total rewrite. Manuals that are based on a specific table of organization and equipment (TOE) may need revision and will be evaluated on a case-by-case basis.

4-2. Training.

a. Unit training. The Army Medical Department's most glaring training shortfall is the exclusion of medical units in training exercises and programs. CHS organizations must be included in active duty, reserve and joint operational exercises. Medical preparedness and interoperability must be tested. Medical forces must be trained to operate in support of broad political and economic objectives. Every CHS unit training program must be planned, aggressively executed, and thoroughly assessed. CHS training must be tough, realistic, and focus on capabilities and requirements across the operational continuum. Active and reserve component medical organizations must routinely practice and be involved with pre-deployment and deployment exercises.

b. Institutional training. Lesson plans and scenarios must be updated to mirror TRADOC Pamphlet 525-5 and Field Manual 100-5. Development of training devices, simulations and simulators that train CHS operations in support of Army operations is both cost-effective and an excellent teaching vehicle for medical personnel. Medical personnel must be provided field training experience to ensure their survivability on the battlefield. They need to be oriented toward battlefield CHS operational policies and procedures, and become familiar with field medical equipment, facilities, organizations, and logistics. Additionally, these personnel need to be trained on and practice CSS field operations and procedures. This will aid in the synchronization of combat health support with other CSS activities on the battlefield. Officer and enlisted filler personnel, projected for assignments to field medical units, must participate in training exercises and programs. They must also train in the clinical environment in order to maintain clinical/medical competency.

4-3. Leader development. AMEDD officers and noncommissioned officers, as well as nonmedical leaders, must fully understand the doctrinal tenets of CHS. Leadership at all levels must be proficient in commanding and working as part of medical organizations on the battlefield. CHS leaders must be developed in an environment that stresses tailorability. They must work with and be schooled in multinational, joint, and host nation support operations. The medical leader must be fully proficient in providing and commanding medical units that can be rapidly and quickly projected throughout the world. Senior medical leaders will need an all-encompassing background. They must be developed with a common understanding of war fighting concepts and have the ability to articulate CHS to these concepts. Medical leaders must think outside of the medical box. That is to say, they must become capable of performing functions not normally associated with their branch. The CHS leader of the future cannot be guilty of understanding only one discipline. They must be part of an Army that requires them to know their specific trade well, but be capable of understanding and interacting with their sister services and host nations. Leader development courses need to be changed to provide leaders at all levels with this training and background.

4-4. Organization. CHS organizations must be as small as possible, yet retain functionality. Medical design shall follow the principles of modularity which allows the medical planner to quickly tailor medical resources in support of force projection operations. Medical organizations should have the capability to expand if the demand arises. Reconstitution of medical units is enhanced by the modular design at all levels of medical support. Interoperability demands the design of liaison teams within medical organizations. Personnel and equipment must be critically evaluated and drawn down to enhance hospital deployability and mobility. Organizational designers will integrate emerging technologies and consolidate medical functions, specialties, and material. This will make medical organizations more effective and easily deployable to the future battlefield. Hospital organizations will be redesigned to make them strategically deployable/mobile to meet operational requirements.

4-5. Materiel. CHS will rely heavily on emerging technologies to aid in meeting the requirements of future Army operations. Materiel strategies for medical organizations should look at near-, mid-, and far-term applications to ensure a constant stream of vital modernization. The medical procurer must look at each

materiel acquisition and its relationship to worldwide force projection and interoperability with sister services, allies, and host nations. A top priority acquisition will be a fully integrated automated C^4 system for all levels. The emphasis and expenditure of CHS funds for future materiel acquisitions should focus on supporting peacetime competition, conflict, and war. Additionally, hospitals will require light-weight, rapidly erectable shelters with man portable environmental control units. The Deployable Medical Systems (DEPMEDS) container system severely limits the mobility of hospitals, pose excess site limitations, and is resource intensive. As technological advances are captured, efforts will be made to leverage this technology into increasing the mobility and deployability of field hospitals. Development must ultimately support field medicine and help cover shortfalls in medical support across the operational continuum.

4-6. Soldiers.

a. The combat medic will face increasing challenges in providing modern health care on the future battlefield as well as in stability and support operations. Continued and increased emphasis is required on training and sustaining the medical proficiency of the combat medic and all military health care providers in the multitude of environments found during Army operations.

b. The training and sustainment of combat lifesavers and continued command emphasis on this training program can significantly improve the confidence of all soldiers in the immediate availability of advanced first aide by a member of the squad/team/ crew.

c. Key to the morale of medics and the welfare of soldiers in their care is the availability of modernized , light-weight medical equipment sets and the ability to rapidly communicate patient requirements across the operational spectrum. Also key is the issue of equipment that improves the medic's ability to efficiently perform duties under all environmental and NBC conditions.

Appendix A
References

Field Manual 41-10
Civil Affairs Operations

Field Manual 100-5
Operations

Field Manual 100-10
Combat Service Support

Field Manual 100-19
Domestic Support Operations

Joint Publication 0-2
Unified Action Armed Forces (UNAAF)

Joint Publication 3-0
Doctrine for Joint Operations

Joint Publication 3-50.2
Doctrine for Joint Combat Search and Rescue

Joint Publication 3-50.21
Joint Combat Search and Rescue Tactics

Joint Publication 4-02.2
Patient Evacuation and Medical Regulating in Joint Operations

TRADOC Pamphlet 11-9
Blueprint of the Battlefield

TRADOC Pamphlet 525-5
Force XXI Operations

TRADOC Pamphlet 525-68
Concept for Modularity

TRADOC Pamphlet 525-200-1
Battle Command Battle Dynamic Concept

TRADOC Pamphlet 525-200-2
Early Entry Lethality and Survivability Battle Dynamic Concept

TRADOC Pamphlet 525-200-3
Dismounted Battle Space Battle Dynamic Concept

TRADOC Pamphlet 525-200-4
Mounted Battlespace Battle Dynamic Concept

TRADOC Pamphlet 525-200-5
Depth and Simultaneous Attack Battle Dynamic Concept

TRADOC Pamphlet 525-200-6
Combat Service Support Battle Dynamic Concept

TRADOC Regulation 11-15
Concept Based Requirements System

TRADOC Regulation 11-16
Development and Management of Operational Concepts

Glossary

Section I
Abbreviations

AMEDD	Army Medical Department
C^2	command and control
C4I	command, control, communications, computers, and intelligence
CHS	combat health support
CONUS	continental United States
DEPMEDS	Deployable Medical Systems
DNBI	disease and non-battle injury
DOD	Department of Defense
EAD	echelons above division
FST	forward surgical teams
MC4	Medical communications for combat casualty care
MCSB	misconduct stress behavior
SIMLM	Single Integrated Medical Logistics Manager
SOF	Special Operations Forces
TOE	table of organization and equipment
TRADOC	United States Training and Doctrine Command
U.S.	United States

Section II
Terms

Battle injuries
Small arms and fragmentation ordnance and munitions. Conventional munitions including small arms, high velocity weapons, land mines, rockets, bombs, artillery, as well as bayonets and other wounding devices used or employed by a single individual or a crew. This threat will be encountered in all geographic areas and will be employed by aggressor forces throughout the spectrum of conflict. Research and development in "smart munitions" and extended range artillery coupled with more powerful high explosives will increase the threat from these type weapons to exposed personnel. In low-intensity conflicts, wounds from booby traps, mines and nontraditional weapons (e.g., homemade explosives, crossbows and "pungie sticks") will be encountered.

Biological warfare
Biological warfare is defined by the U.S. intelligence community as the intentional use of disease-causing organisms (pathogens), toxins, or other agents of biological origin to incapacitate, injure, or kill humans and animals; to destroy crops; to weaken resistance to attack; and to reduce the will to wage war. Historically, biological warfare has primarily involved the use of pathogens as sabotage agents of food and water supplies in order to spread contagious disease among target populations. For purposes of medical threat risk assessment, only those biological warfare agents that incapacitate, injure, or kill humans or animals are of interest.

Blast effect munitions
Primary blast injury has been a rarity in the history of U.S. military medicine. Battlefield employment of blast effect munitions may represent an emerging medical threat in the form of primary blast wounded. This will be particularly true as new explosives developed for use in conventional munitions and special purpose munitions, such as fuel-air-explosives developed to exploit the advantages of blast effect munitions. Gas-filled bodily organs such as the ears, lungs, and digestive tract are most susceptible to primary blast injury. This emerging threat may be reflected in terms of lower lethality but greater numbers of primary blast wounded and significantly increased medical workload.

Chemical warfare
Since World War I, chemical warfare has been publicly held in disrepute by most political and military leaders. Evidence accumulating over the course of the last 50 years has called into question any false sense of security that might have developed regarding public pronouncements about the development of offensive chemical warfare capability and its application for military purposes. The reported use of chemical agents and toxins in Southeast Asia by Vietnamese forces, the confirmed use of agents by Egypt against Yemen and later by Iraq against Iranian forces, and the probable use of agents by the Soviets in Afghanistan indicate a heightened interest in chemical warfare as a force multiplier and to counter battlefield advantages associated with advanced technology weapons in both the international and national military or political arenas.

Combat stress, battle fatigue, and continuous operations
Global mobility of U.S. forces is a major factor in United States political and military strategy. Alerted forces may be required to operate without rest for extended periods of time during mobilization, staging, air-transport, and combat insertion into hostile areas. Modern combat, with its increased lethality, rapid maneuvers, application of sophisticated skills, the constant threat of the use of unconventional weapons, and day/night, all weather operations will stress soldiers to the limits of their endurance. These factors can become the primary agents of mission failure. Under these conditions, stress, as well as fatigue, becomes a major contributor to degradation of force performance and the number of casualties seen by the combat health support system.

Directed energy sources
These devices generate and illuminate a target with coherent radiation in order to induce electronic upset, thermal or structural damage, and thereby cause mission failure. The radiation is of three types: radio frequency, laser, and charged particle beam. The principal directed energy threat in the near-term is from the use of laser devices, such as laser range finders or target designator. Soldiers may be wounded either coincidentally with normal use of these devices or when they are used intentionally in an antipersonnel role.

Echelons (levels) of care
The combat health support (CHS) system is built around levels, or echelons, of care on the battlefield. Each echelon (level) of care reflects specific capabilities of medical support. These capabilities will be contained within the expanded capabilities of the next higher echelon (level).

Echelon (level) I. This echelon (level) of care is provided by designated individuals/elements organic to combat and combat support organizations. It may also be referred to as unit level medical support. This medical treatment is best described as advanced trauma management

Echelon (level) II. This echelon (level) of care is characterized by the medical support provided by divisional/nondivisional medical companies. This may also be referred to as division level medical support. This medical treatment consists of advanced trauma management, minimal nursing care, and a limited diagnostic capability with its X-ray and laboratory equipment. It also possess limited capabilities for emergency dental treatment.

Echelon (level) III. At echelon (level) III medical organizations, the patient is treated in a hospital that is staffed and equipped to provide medical care to a variety of wounds, injuries, and illnesses. This level of care is provided by hospitals located within the corps area of responsibility. The primary treatment mission is to prepare patients for evacuation, and then return to duty those patients that are able to perform minimum mission essential tasks.

Echelon (level) IV. At echelon (level) IV, the patient receives medical care in a hospital that is staffed and equipped to provide both general and specific medical and surgical care. These hospitals are normally found in theater, at echelons above corps. The primary treatment mission of these hospitals is to provide an enhanced stabilization capability, so patients can be evacuated over extended distances.

Echelon (level) V. Echelon (level) V care is generally characterized by definitive care provided to all categories of patients by CONUS hospitals.

Environmental extremes and battlefield hazards
Heat, cold, humidity, high terrestrial altitude, and environmental pollutants are environmental factors that may pose significant health hazards to an unacclimated, unprepared, and/or ill-conditioned military force. Other battlefield hazards, such as those generated by our own weapon systems and equipment, or poisonous plants, animals, and insects, when combined, are a source of nonbattle injuries against which the soldier must be protected. Preventive measures against these hazards may involve engineering and design solutions, personal protective equipment, or leadership and training solutions. Many nations of the world where the United States has vital national interests have areas of high altitude, humidity, and extremes in temperature. These areas include countries with year-round tropical climates and extended rainy seasons (e.g., Panama and the Philippines), as well as areas with harsh cold winters (Korea and Northern Europe).

Flame and incendiary weapons
Flame and incendiary systems are effective antipersonnel and antimateriel agents on the battlefield. Early generation weapons and munitions are still to be found in the armies of developed nations. Two examples include napalm and white phosphorous fill for aerial delivered bombs. New generation weapons and flame/incendiary agents are being fielded. Examples of some of the newer systems include the Russian flame projectile systems. Possible uses of flame and incendiary weapons include the clearing of difficult defensive positions, such as strong points, caves, bunkers, buildings, and against soft shelter and vehicular targets. Flame has also been used quite effectively in previous conflicts in an antitank role. Flame may also be used as an effective obstacle or barrier.

Joint operations
Joint operations are military actions performed by significant elements of two or more U.S. services. Joint operations may be conducted by joint forces, service forces within a joint force, or service forces in relationships (e.g., support, coordinating authority), which, of themselves, do not create joint forces.

Medical communications for combat casualty care (MC4)
The system of technologies that will be integrated into all echelons of CHS. The technologies will include enhanced monitoring of the soldier on the battlefield, audio and visual mentoring of medical staff on the battlefield, teleconsultation between the different echelons of care, enhanced enroute care, the use of evacuation capsules and telesurgery.

Medical threat
Medical threat is the composite of all ongoing or potential enemy actions and environmental conditions that will reduce combat effectiveness through wounding, injuring, causing disease, and/or performance degradation.

Misconduct stress behavior
Misconduct stress behavior (MCSB) can occur at all levels of intensity. However, MCSB tends to appear more frequently in low-intensity unconventional situations. MSB includes disobedience, desertion, self-inflicted wounds, substance abuse, and other related behaviors. Once misconduct has occurred, medical responsibility is limited to treating medical problems resulting from the behavior. The administration of discipline and punishment is a command responsibility. However, early recognition of the causes of stress in provoking misconduct can assist the command in applying preventive measures.

Modularity
Modularity is the process of designing organizational elements that functionally represent the whole organization. Modules created in the medical reengineering process are designed using this principle. This permits the commander to detach functions and capabilities from a parent unit for deployment into a contingency force. These elements are capable of stand alone operations, and support the concept of split based operations. Further, the detachment does not degrade the parent unit's capability of further activity. The elements reflect the essence of the parent, are interchangeable, expandable, and tailorable to meet changing missions. Modularity permits rapid identification of appropriately sized and properly supported mission oriented forces capable of deployment and employment. Under this definition of modularity, there is a certain degree of redundancy required, which may increase the personnel resources, among others, that may be needed in the force structure.

Module
An organizational element constructed with discrete elements of specific capabilities. The element is designed to facilitate both battlefield economies of force and limited term task organization. A module does not necessarily reflect the complete essence of the parent unit. Additionally, the deployment of a module may considerably degrade the parent unit's ability to function. Some of these modules, created before the concept of modularity was developed, may remain in the force structure. Examples are treatment squads and ambulance squads.

Multinational operations
An operation conducted by forces of two or more nations. An operation conducted through a formal arrangement is termed a "combined" or "allied" operation. Military action in a temporary or informal arrangement for common interests is termed a "coalition" operation. Forces and commanders can similarly be described as multinational, allied, combined, or coalition, as appropriate.

Naturally occurring disease
Naturally occurring diseases, also referred to as endemic diseases, represent a significant threat to U.S. forces deployed outside CONUS. Historically, infectious diseases have been responsible for more lost foxhole days than battle injuries. Many naturally occurring diseases have short incubation periods and may cause significant numbers of casualties during the first several days of a deployment.

Nuclear weapons
Since the breakup of the Soviet Union, the number of countries with known nuclear capable military forces has almost doubled. Available information suggests that a number of countries in the Middle East, Asia, and Africa may have nuclear weapons capability within the next decade. In addition to casualties, a nuclear weapon detonation can generate an electromagnetic pulse that will result in catastrophic failure of electronic equipment components.

FOR THE COMMANDER:

OFFICIAL:

JAMES J. CRAVENS JR.
Major General, GS
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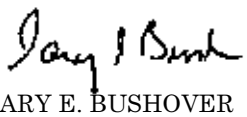

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